

K.N.
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LOW-PIN-COUNT CHIP PACKAGE AND MANUFACTURING

METHOD THEREOF

-- This application is a Cross - REFERENCE TO RELATED APPLICATIONS
28, 2000. -- Divisional of Application Serial No. 09/492,820 filed January
Background of the Invention

1 Field of the Invention

5 This invention relates to semiconductor chip packages, and more specifically to low-pin-count chip packages and manufacturing methods thereof.

2. Description of the Related Art

10 Fig. 1 is a low-pin-count chip package 100 according to a preferred embodiment disclosed in R. O. C. Publication No. 348306 entitled "Device Having Resin Package And Method Of Producing The Same". The low-pin-count chip package 100 includes a chip 110 sealed in a package body 120. The active surface of the chip 110 is provided with a plurality of bonding pads 110a electrically connected to a plurality of connection pads 130. The backside surface of the chip 110 is exposed from the package body 120 through a conductive adhesive layer 112. The connection pads 130 are located at the periphery of the chip 110 and exposed from the lower surface of the package body 120 for making external electrical connection. Since the package body 120 does not cover the exposed lower surface of the connection pads 130, it can not firmly lock the connection pads 130.

20 The connection pads 130 are usually made of metal with good electrical conductivity such as copper but the package body 120 is made of insulating material such as epoxy molding compound. Accordingly, the bond between connection pads 130 and the package body 120 is relatively weak and the difference of the coefficient of thermal expansion (CTE) therebetween is very large. Because of the CTE mismatch, stresses are induced at the interface between the connection pads and the plastic package body as the conventional package experiences temperature cycling. The stresses, in turn, result in the delamination at the metal-plastic interface. When the delaminations had occurred at the plastic-metal interface, moistures from the environment are easy to penetrate into the plastic package body and accumulate in the delaminated area. Once moisture accumulates in the package, rapid temperature ramp-up will cause the moisture to vaporize and expand, thereby inducing an hygrothermal stresses in the delaminated area which causes the surrounding plastic package body to popcorn. One of the most common occurrence of package popcorning occurs when

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